

Go Native: Plants Bring Pollinators in Drove

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EAST LANSING, Mich. -- Keeping workers employed is an important issue to everyone right now. Members of one group who spend all of their time toiling outdoors, making a nearly \$8 billion contribution to U.S. agriculture, want their share of the green, too -- but it's not money.

A Michigan State University (MSU) entomology research team has found that native bees and insect predators that have access to native plants do a great job of pollinating and consuming insect pests. This can add up to lower pest control expenses and higher yields at harvest.

In a two-year study recently published in the Ecological Society of America's journal *Frontiers in Ecology and the Environment*, they found 26 native Michigan plants that were highly attractive to pollinators and beneficial predatory insects. By establishing native plants that support beneficial insects, farmers may be rewarded with improved pollination and pest control. That can mean decreased costs and increased profits along with the associated environmental benefits.

Though the study was aimed at finding plants for use in agricultural settings, the same plants will perform similar functions in suburban and urban landscapes. With more people growing large gardens, that can mean more improved harvests at the end of the summer.

"Homeowners can benefit from including these plants in their landscapes," says Rufus Isaacs, MSU associate professor of entomology, an MSU Extension entomologist and the report's principal author. "Squash, pumpkins, strawberries and raspberries will yield larger fruit with good pollination. Providing these plants to improve your habitat for bees and other beneficial insects pays dividends to the home gardener."

The study required the team to monitor insect activity on 43 native plant species. But how do you count flying insects? It takes a Hoover. The researchers used a retrofitted shop vac to suck insects from the plants, then took the filled bags to the laboratory, where they identified and counted the numbers found on each plant species when it was in bloom. The top 26 insect-attracting plants are listed online at <http://nativeplants.msu.edu/results.htm>.

The results of their work indicate that planting such species as Culver's root, blue lobelia and Riddell's goldenrod along a fence row or a garden's border can entice native bees. Golden Alexanders, sand coreopsis and pale-leaved sunflowers were among the species found to attract native predators.

"We see this as a win-win for agriculture and the environment," says Doug Landis, MSU professor of entomology and one of the study's authors. "All of the plants we tested are prairie and savanna plants that were once common in our region, but these have become relatively rare in agricultural landscapes. Reestablishing these species on farms adds natural beauty and can benefit a variety of native wildlife such as birds and butterflies in addition to beneficial insects."

Though this study took place in Michigan and its results can be immediately put to use across the Great Lakes region, it can be replicated elsewhere. According to a 2006 study published in BioScience, native pollinators make contributions to U.S. agriculture worth \$3.1 billion, and natural enemies contribute pest control worth \$4.5 billion each year.

The work has gone beyond the MSU campus. Isaacs and the team are setting up conservation plantings on western Michigan blueberry, cherry and apple farms and are now testing a mix of the best plant species for attracting pollinators and predators especially for those crops.

It's also jumped across oceans. With input from the MSU researchers, a similar project is under way in Argentina. Landis and other MSU researchers are also traveling to the central Asian countries of Tajikistan and Kyrgyzstan to check on studies they have initiated there, <http://ipm.msu.edu/central-asia.htm>.

“Every region of the world has its own unique native plants and insects. We teach people the basic techniques, and they conduct the screening for themselves,” Landis says.

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Writer: Laura Probyn, 517-432-1555, ext. 175